

# Questions and Answers About Karnal Bunt

## Overview

### **Q. What is Karnal bunt?**

**A.** Karnal bunt is a minor fungal disease of wheat, durum wheat, and triticale, a hybrid of wheat and rye. The disease is spread primarily through the use of infected seed, and infection occurs during the flowering stage of the host plant. Weather and climatic conditions, specifically cool and wet weather at the time of flowering, have a significant influence on disease development.

### **Q. How does Karnal bunt affect wheat production?**

**A.** Karnal bunt has an insignificant effect on yield. However, grain quality can be affected at infection levels greater than 3 percent.

### **Q. Where was Karnal bunt first discovered?**

**A.** Karnal bunt was first reported in 1931 in wheat-growing areas near the city of Karnal in the Indian State of Haryana. Since then, it has been found in all major wheat-growing States of India, as well as Pakistan, Iraq, Afghanistan, and a small area in South Africa. The disease has been well established in some areas in northwestern Mexico since 1982.

Karnal bunt was first confirmed in the United States in Arizona on March 8, 1996. Soon after that initial discovery, the fungus was also found in parts of Texas and California. In 2001, the U.S. Department of Agriculture's (USDA) Animal and Plant Health Inspection Service (APHIS) regulated Archer, Baylor, Throckmorton, and Young counties in Texas for Karnal bunt.

### **Q. What does Karnal bunt look like?**

**A.** Infection begins at the embryo end of the seed. Early infection causes a swelling and darkening of the seed tip. As the infection progresses, the area along the seed suture darkens. Eventually, in a heavily infected kernel, the seed resembles a canoe or row boat, dark and sunken along the suture line. Heavily infested samples of grain may have a foul or fishy odor. Four other diseases found in the United

States can be mistaken for Karnal bunt: black point, common bunt, dwarf bunt of wheat, and a bunt of rye weed commonly present in wheat fields.

### **Q. What should growers do if they suspect that they may have Karnal bunt in their wheat?**

**A.** Growers should contact the nearest State regulatory official or an APHIS Plant Protection and Quarantine (PPQ) field office to arrange to have an official sample of their wheat taken and analyzed for bunted kernels. Any kernels that show signs of contamination should be placed in a plastic bag within a sturdy container and taken to the nearest State regulatory official or to a PPQ field office. For general information about this process, or to identify your local contacts, please call 1-888-661-8083. To reach a PPQ field office, in States within Karnal bunt-regulated areas, please call one of the following:

Olney, TX: (940) 564-4192

San Saba, TX: (915) 372-6276

Arizona: (602) 431-8930

California: (323) 881-6512

### **Q. Who is providing leadership at USDA for the coordination of Karnal bunt policy issues?**

**A.** In January 2003, Agriculture Secretary Ann Veneman appointed Marketing and Regulatory Programs Deputy Under Secretary Dr. Charles Lambert as USDA's National Karnal Bunt Policy Coordinator.

## Compensation

### **Q. Who is eligible for compensation under USDA's Karnal bunt compensation package?**

**A.** On August 6, 2001, USDA published a final rule providing Karnal bunt compensation to certain individuals affected by the disease. Under this rule, USDA compensated certain growers, handlers, seeds companies, owners of grain storage facilities, flour millers, and participants in the National Karnal Bunt Survey who incurred losses and expenses because of Karnal bunt in 1999-2000 and 2000-2001 crop seasons and beyond. This rule also specified that compensation will no longer be made available to persons growing or handling crops that were knowingly planted in previously regulated areas after the 2000-2001 crop year.

In May 2002, APHIS amended its regulations in order to compensate certain growers and handlers of grain and seed affected by Karnal bunt who were not eligible for compensation under the 2001 rule. This amended rule also provided compensation for certain

wheat grown in States not covered by an Declaration of Extraordinary Emergency comingled with Karnal-bunt positive wheat while being stored in Texas.

The level of compensation depends on whether the grain comes from an area that is newly regulated for Karnal bunt or an area that has been previously regulated for the fungus.

Compensation will be made available when a new outbreak of Karnal bunt is detected after the crop has already been planted and in instances where an extraordinary emergency is declared or an Emergency Action Notification is issued after the crop has already been planted or at the time it is sold. Producers who plant wheat in previously regulated areas after the 2000-2001 season will not be compensated.

APHIS must publish regulations in the Federal Register before offering compensation to farmers. Once the compensation rate is determined and the final rule is published, APHIS makes every effort to ensure affected producers, grain handlers, and seed companies are compensated as quickly as possible.

## Survey

### **Q. What areas of the United States are regulated for Karnal bunt?**

**A.** Today, APHIS regulates areas in the following counties: Imperial and Riverside counties in California; La Paz, Maricopa, Pinal, and Yuma counties in Arizona; Archer, Baylor, Knox, San Saba, Throckmorton, and Young counties in Texas for Karnal bunt.

### **Q. What happens to crops that test positive for Karnal bunt?**

**A.** Wheat, grain, straw, or wheat hay that tests positive for Karnal bunt cannot be moved to locations outside the regulated area without APHIS approval. A limited permit is issued to allow the transport of these products to an approved facility for treatment or disposal. Treatments include steam flaking and rolling grain for use as animal feed and composting straw for use in mushroom production.

If wheat grain, straw, or wheat hay is produced in a field found free of Karnal bunt, USDA will issue a certificate allowing the unrestricted movement of these products.

### **Q. What is the Karnal Bunt National Survey?**

**A.** APHIS initiated the Karnal Bunt National Survey in 1996. This survey provides data to support the Karnal bunt-free status of grain exports from the United States. Grain samples are taken in alternating years from every county in the United States that produces 1 million bushels or more of wheat. Participation is voluntary and grain elevators throughout every State

that produces wheat provide the samples. APHIS collects a 4-pound composite wheat sample from county elevators after harvest. The samples are then sent to an approved laboratory and tested for bunted kernels. Bunted kernels are conclusive evidence that a sample is positive for Karnal bunt and further evaluations are done to assess the need for any regulatory action.

In 2002, more than 1,070 grain samples from 40 States were collected and tested as part of the National Karnal Bunt Survey. All results were negative.

## Regulations

### **Q. What is a regulated area?**

**A.** An area that is regulated by USDA for Karnal bunt is a distinct, definable, commercial wheat production area that includes at least one field that tested positive for Karnal bunt and the surrounding 3 miles. USDA restricts movement of certain agricultural products and farm equipment within and out of these regulated areas.

USDA tests wheat grown in regulated areas each year for Karnal bunt.

### **Q. What items are included in USDA's regulations?**

**A.** Articles included in USDA's Karnal bunt regulations are grain, seed, or straw and hay of wheat, durum wheat, and triticale; conveyances (trucks, railcars, and other containers); grain elevators and wheat storage structures; manure from animals fed on wheat; root crops with soil; soil from areas where field crops are produced; used bags, sacks, and containers; used farm tools; and used cultivating, harvesting, seed conditioning, and soil-moving equipment.

### **Q. How do growers, handlers, and seed harvesters arrange to move wheat or other items from the regulated area?**

**A.** A grain sample must be drawn by an APHIS inspector or State cooperator at the time of harvest, or if already harvested, from the storage bins. The sample is then taken to an approved testing facility and examined for bunted kernels. In order to qualify for a PPQ certificate, a sample from a previously noninfected field must be found free of bunted kernels. The grain will then be allowed to be transported without restrictions to any available market. If the grain sample came from grain already in storage and no bunted kernels are found, then a PPQ limited permit will be issued for the grain to be transported to any available outlets. If one or more bunted kernels are found in the sample, then a PPQ emergency action notice (EAN) will be issued and the grain sealed in the storage facility prior to approved treatment or disposal. All seed wheat produced within the

regulated area can only be planted within the regulated area in which it was produced if the seed tests negative for both spores and bunted kernels. Seed cannot be moved outside the regulated area.

Equipment used to harvest, transport, or process wheat from a field that tested positive for Karnal bunt that is moving out of a regulated area must be thoroughly inspected, cleaned, and disinfected to prevent the possible spread of Karnal bunt outside the regulated area. An APHIS inspector or State cooperator will monitor the cleaning and disinfection of the equipment and will issue a Federal certificate stating that the equipment has been properly cleaned and disinfected. Treatment options to clean equipment include drenching with a bleach solution, steam cleaning, power washing with 170-degree-Fahrenheit water, or fumigation.

Growers, seed handlers, and harvesters should call their local APHIS office to arrange for an inspector or State cooperator to test their wheat, grain, straw, and hay for Karnal bunt. Appointments are also necessary for inspectors to supervise the disinfecting of harvesting equipment.

The movement of regulated items outside the regulated area without the proper inspections and treatments could result in fines.

#### **Q. What are compliance agreements, certificates, and limited permits?**

**A.** A compliance agreement is a written agreement between APHIS and anyone engaged in growing, handling, or moving regulated articles in which he or she agrees to comply with provisions for the movement of all regulated articles. The agreement provides specific requirements that must be met to grow, handle, or move regulated articles within and to specific locations outside the regulated area.

APHIS issues certificates for movement of regulated articles that have been tested, found to be negative, and certified as having been produced in a specific location known to be free of Karnal bunt. APHIS also issues certificates for properly cleaned and disinfected equipment. Certificates allow these products to be moved without restrictions to any destination, including those outside the regulated areas.

APHIS issues limited permits for regulated articles that test positive for Karnal bunt or have tested negative but cannot be certified at a field level as having been produced in an area known to be free of Karnal bunt (i.e. stored grain). Wheat, grain, straw, and wheat hay that has tested negative for Karnal bunt may be moved to any available market inside and outside the regulated area with a limited permit. Wheat grain, straw, and wheat hay that test positive can be moved to approved treatment locations, inside and outside the regulated area, with a limited permit. This movement must be done in accordance with conditions specified on the permit.

## **Additional Questions**

#### **Q. What was the outcome of the Second Karnal Bunt Workshop in October 2002?**

**A.** APHIS held the Karnal Bunt Workshop in Oklahoma City, OK, to bring stakeholders and cooperators together to update the status of actions items in the Karnal Bunt Strategic Framework, discuss the previous harvest, and detail new approaches for the 2003 harvest. The Karnal Bunt Strategic Framework can be found at [www.aphis.usda.gov/ppq/emergencyprograms](http://www.aphis.usda.gov/ppq/emergencyprograms).

#### **Q. Are there other measures to reduce the risk of spreading Karnal bunt?**

**A.** Growers are required to have all seed produced within the regulated area tested for Karnal bunt spores. Seed that tests negative for Karnal bunt is approved for planting in regulated areas. Following the specific guidelines for cleaning of equipment, feeding livestock, and moving regulated commodities in and around the regulated area will help reduce the risk of spread.

#### **Q. What if cattle have fed on infected wheat?**

**A.** If cattle have grazed on Karnal bunt-infected wheat, grain, straw, or hay, they should be held in a noncultivated area, such as a feedlot, and fed on noninfected feed for at least 5 days before being moved to other areas. This prevents Karnal bunt spores from being spread through manure. Karnal bunt is not harmful to animals or humans.

#### **Q. Does Karnal bunt affect straw and hay?**

**A.** If the grain from a wheat field tests positive for Karnal bunt, then the straw from the field is also considered to be infected with Karnal bunt. The straw then becomes a regulated product and must be transported to an approved processing location under a limited permit issued by APHIS.

Wheat hay can also carry the fungus if kernel formation has proceeded past the dough stage. Hay that has been harvested from a regulated area prior to the dough stage can be moved within and outside the regulated area under a limited permit or certificate. If kernel formation has progressed past the dough stage, PPQ must inspect the hay and take a sample of the grain heads to test for Karnal bunt. If a bunted kernel is found in the grain heads, the hay can only be fed to livestock within the specified regulated area under a compliance agreement with APHIS. The appropriate waiting period must be followed before the livestock are moved or the hay may be transported to an approved treatment facility under a PPQ limited permit.

**Q. Where can people get more information about Karnal bunt and APHIS' current Karnal bunt regulations?**

**A.** To learn more about Karnal bunt or to report a suspected outbreak, please contact:

USDA-APHIS-PPQ

1-888-661-8083

Pest Detection and Management Programs

4700 River Road, Unit 98

Riverdale, MD 20737-1236

(301) 734-4387

Karnal bunt information is also available on the APHIS Web site at

[www.aphis.usda.gov/ppq/emergencyprograms](http://www.aphis.usda.gov/ppq/emergencyprograms).

---

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, sex, religion, age, disability, political beliefs, sexual orientation, or marital or family status. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, Room 326-W, Whitten Building, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call (202) 720-5964 (voice and TDD). USDA is an equal opportunity provider and employer.